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THE DIRECTV GROUP INC
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EXAMINER	
BLUDAU, BRANDON S	
ART UNIT	PAPER NUMBER
2132	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/085,346	COCCHI ET AL.	
	Examiner	Art Unit	
	Brandon S. Bludau	2132	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 October 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in reply to amendment filed 24 October 2006. Claims 1, 10, 19 and 28 have been amended. No claims have been added or cancelled. Claims 1-36 are pending.

Response to Arguments

2. Applicant's arguments filed 10/24/2006 have been fully considered but they are not persuasive. The Applicant argues that the combined references fail to teach wherein "data and address lines of the protected component are routed only to the fixed state custom logic block". New grounds of rejection are given below in reference to the amended independent claims.

3. The Applicant also argues that by amending the independent claim to include wherein the address and data lines are routed only to the custom logic block, it causes Wong to teach away from the invention. The Examiner asserts the current rejection with the combination of Wong, by noting that Wong is used to merely demonstrate the common and well-known feature of a shared charge pump in circuit design, and it should be noted the Examiner did not modify Kocher/Cohen to include the memory arrangement of Wong. Thus the Examiner asserts the Wong in combination of Kocher/Cohen cannot teach away from the invention.

4. The Examiner asserts the rejection to all dependent claims due to the rejection of the claims they depend upon.

Claim Rejections - 35 USC § 103

5. The Examiner includes in this action, only the independent claims, as the dependent claims stand rejected under the same rejections given in the previous office action.

6. Claims 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen (US Patent 5282249) in view Kocher (US Patent 6289455) and further in view of Wong (US Patent 6278633).

7. As per claim 1, Cohen discloses a system for controlling access to digital services comprising:

(a) A control center configured to coordinate and provide digital services (see Fig. 2);

(b) An uplink center configured to receive the digital services from the control center and transmit the digital services to a satellite (see Fig. 1/1 #20);

(c) The satellite configured to:

Receive the digital services from the uplink center (Fig. 1/2 #22);

Process the digital services (Fig. 1/2 #22 wherein processing of digital services is the intrinsic step that allows transmission); and

Transmit the digital services to a subscriber receiver station (Fig. 1/2 #24);

(d) The subscriber receiver station configured to:

Receive the digital services from the satellite (Fig. 1/2 #26);

Control access to the digital services through an integrated receiver/decoder (IRD) (Fig. 1/2 #30);

(e) A conditional access module (CAM) communicatively coupled to the IRD (Fig. 1/2 #32);

but does not disclose wherein the CAM comprises:

a protected nonvolatile memory component, wherein:

the protected nonvolatile memory component is used to contain state information to provide desired functionality and enforce one or more security policies for accessing the digital services; and

the protected nonvolatile memory component is protected from modification such that the protected nonvolatile memory component is read only;

access to the protected nonvolatile memory component is isolated;

a microprocessor's unprotected nonvolatile memory component wherein programming control and a programming charge pump are shared by both the protected nonvolatile memory component and the microprocessor's un-protected nonvolatile memory component;

a hidden non-modifiable identification number embedded into the protected nonvolatile memory component, wherein the identification number uniquely identifies the CAM; and

the identification number is used to limit a cloning attack wherein said cloning attack comprises copying the identification number to a new CAM; and

a fixed state custom logic block, wherein the protected nonvolatile memory component is not directly accessible via a system bus and access to the protected nonvolatile memory component is limited to the custom logic block.

Kocher discloses wherein the CAM (Fig. 2 #225 wherein the CAM is the cryptographic rights unit) comprises:

a protected nonvolatile memory component (column 21 lines 13-15), wherein:

the protected nonvolatile memory component is used to contain state information to provide desired functionality and enforce one or more security policies for accessing the digital services (column 10 lines 36-38 and 43-47 wherein the digital services is pay-tv); and

the protected nonvolatile memory component is protected from modification such that the protected nonvolatile memory component is read only (column 10 lines 43-47); and

access to the protected nonvolatile memory component is isolated (Fig. 2 #265);

a hidden non-modifiable identification number embedded into the protected nonvolatile memory component, wherein the identification number uniquely identifies the CAM (column 7 lines 65-67 column 10 lines 38-40 and 43-45: it can be understood that the device key necessarily applies to an identification number which as used by the applicant is a security-related parameter. Moreover, in view of column 10 lines 61-65 and column 11 lines 53-65 it can clearly be seen that the rights key which is generated from the device key/identification number is used to decrypt/access the content; which meets the functionality of the identification number as defined by the Applicant. Moreover in column 12 lines 24-32, 37-40 and 62-66, Kocher explains the use of the device key to determine permission of access to the services, which also meets a requirement of the identification number as stated by the Applicant); and

the identification number is used to limit a cloning attack wherein said cloning attack comprises copying the identification number to a new CAM (column 14 lines 2-9 and column 18 lines 37-45 and column 26 lines 25-40; It can be clearly seen that the function of the device key which is unique to a device implies a necessary concern that this key is not copied to another CAM. These passages clearly demonstrate that a compromised device key would require the cessation of enabling access to those CRUs containing that particular key. This is necessarily related to the cloning attack as discussed by the Applicant wherein if an identification number is known to be used by multiple devices illegally, those devices using that number would no longer be effective); and

a fixed state custom logic block, wherein the protected nonvolatile memory component is not directly accessible via a system bus and access to the nonvolatile memory component is limited to the custom logic block (Fig. 2 #260 wherein the CryptoFirewall is the custom logic block), and wherein data and address lines of the protected nonvolatile memory component are routed only to the fixed state custom logic block (Fig. 2 #260 and 265 wherein it is clear throughout the disclosure that only the CryptoFirewall has access to the protected memory, thus necessitating that the data and address lines of the protected memory are routed only to the fixed state custom logic block, as would be evident to one of ordinary skill).

Kocher is analogous art because it discusses a method and apparatus for preventing piracy of digital content including the use of a smart card.

It would have been obvious at the time of the invention to include the features of the CAM found in Kocher in the smart card used by Cohen to control access to the broadcasted data.

Motivation for one to modify Cohen as discussed above would have been to improve the security of systems used to distribute and protect digital content (from piracy or attackers) as taught in Kocher (column 5 lines 55-56).

Kocher does not disclose a microprocessor's unprotected nonvolatile memory component wherein programming control and a programming charge pump are shared by both the protected nonvolatile memory component and the microprocessor's un-protected nonvolatile memory component;

Wong does disclose wherein programming control and a programming charge pump is shared by memory (column 3 lines 7-19 and column 4 lines 1-7).

Wong is analogous art because it is directed to system concerning the use of non-volatile memory in a circuit.

It would have been obvious to modify Kocher to include wherein the various memory units, protected and unprotected, share programming control and a programming charge pump. Kocher discusses that the protected and unprotected memory are located on the same chip, thus enabling the use of a common programming control and charge pump.

Motivation for one to modify Kocher as discussed above would have been obvious to one of ordinary skill in the art. As discussed and implied in Wong, sharing a charge pump provides uniformity for a read or write voltage used when accessing the

memory cells (column 3 lines 10-13). One of ordinary skill in the art should understand that the practice of sharing a charge pump is very common in the circuit design and practice and thus motivation for modifying Kocher would include the inherent advantages of sharing charge pumps as is known in the art.

8. Claims 10 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kocher (US Patent 6289455) in view of Barth (US Patent 6334216) and further in view of Wong (US Patent 6278633).

9. As per claim 10, Kocher discloses a method for limiting unauthorized access to digital services comprising:

Embedding a hidden non-modifiable identification number into a protected nonvolatile memory component (column 21 lines 13-15 and column 18 lines 37-45 wherein the identification number is the serial number alluded to and which is stored in the protected memory and is non-modifiable in the same manner as the unique BATCH_KEY described in column 18 lines 49-52; see also claim 1), wherein:

The protected nonvolatile memory component is used to contain state information to provide desired functionality and enforce one or more security policies for accessing the digital services (column 10 lines 36-38 and 43-47 wherein the digital services is pay-tv);

The hidden non-modifiable identification number uniquely identifies a device containing the protected nonvolatile memory component (column 18 lines 37-45 see also claim 1); and

the identification number is used to limit a cloning attack wherein said cloning attack comprises copying the identification number to a new CAM (column 14 lines 2-9 and column 18 lines 37-45 and column 26 lines 25-40; It can be clearly seen that the function of the device key which is unique to a device implies a necessary concern that this key is not copied to another CAM. These passages clearly demonstrate that a compromised device key would require the cessation of enabling access to those CRUs containing that particular key. This is necessarily related to the cloning attack as discussed by the Applicant wherein if an identification number is known to be used by multiple devices illegally, those devices using that number would no longer be effective); and

Isolating access to the nonvolatile memory component such that access to the nonvolatile memory component is limited to a fixed state custom logic block (Fig. 2 #260 wherein the CryptoFirewall is the custom logic block as described in column 21 lines 34-35), the nonvolatile memory component is protected such that the nonvolatile memory component is read only (column 10 lines 43-47), and the nonvolatile memory component is not directly accessible via a system bus (Fig. 2 #260) and wherein data and address lines of the protected nonvolatile memory component are routed only to the fixed state custom logic block (Fig. 2 #260 and 265 wherein it is clear throughout the disclosure that only the CryptoFirewall has access to the protected memory, thus necessitating that the data and address lines of the protected memory are routed only to the fixed state custom logic block, as would be evident to one of ordinary skill).

But does not disclose wherein access to the digital services is based on access rights associated with the hidden non-modifiable identification number and programming control and a programming charge pump are shared by both the protected nonvolatile memory component and a microprocessor's unprotected nonvolatile memory component.

Barth does disclose wherein access to the digital services is based on access rights associated with an identification number (column 4 lines 33-45 wherein the access rights is whether it is associated with a blocking note).

Barth is analogous art because it discloses a method of gaining access to services based on an identification number utilized in an access card.

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Kocher to include the method of comparing an identification number to a list of unauthorized numbers and their access rights before granting access.

Motivation for one to modify Kocher as discussed above would have been to allow system management to prevent access to the services if the corresponding number is reported as lost or if the user is delinquent in his obligations for the services offered as taught in Barth (column 3 lines 37-42).

Wong does disclose wherein programming control and a programming charge pump is shared by memory (column 3 lines 7-19 and column 4 lines 1-7).

Wong is analogous art because it is directed to system concerning the use of non-volatile memory in a circuit.

It would have been obvious to modify Kocher to include wherein the various memory units, protected and unprotected, share programming control and a programming charge pump. Kocher discusses that the protected and unprotected memory are located on the same chip, thus enabling the use of a common programming control and charge pump.

Motivation for one to modify Kocher as discussed above would have been obvious to one of ordinary skill in the art. As discussed and implied in Wong, sharing a charge pump provides uniformity for a read or write voltage used when accessing the memory cells (column 3 lines 10-13). One of ordinary skill in the art should understand that the practice of sharing a charge pump is very common in the circuit design and practice and thus motivation for modifying Kocher would include the inherent advantages of sharing charge pumps as is known in the art.

10. Claim 28 is rejected because it discusses similar subject matter to claim 10.

11. Claims 19 is rejected under 35 U.S.C. 103(a) as being anticipated by Kocher (US Patent 6289455) in view of Wong (US Patent 6278633).

12. As per claim 19, Kocher discloses a conditional access module (CAM), (Fig. 2 #225 wherein the CAM is the cryptographic rights unit) comprising:

A microprocessor (column 21 lines 1-5);

An unprotected nonvolatile memory component connected to the microprocessor (column 21 lines 1-5);

a protected nonvolatile memory component (column 21 lines 13-15), wherein:

the protected nonvolatile memory component is used to contain state information to provide desired functionality and enforce one or more security policies for accessing the digital services (column 10 lines 36-38 and 43-47 wherein the digital services is pay-tv); and

the protected nonvolatile memory component is protected from modification such that the protected nonvolatile memory component is read only (column 10 lines 43-47); and

access to the protected nonvolatile memory component is isolated (Fig. 2 #265);

a hidden non-modifiable identification number embedded into the protected nonvolatile memory component, wherein the identification number uniquely identifies the CAM (column 7 lines 65-67 column 10 lines 38-40 and 43-45: it can be understood that the device key necessarily applies to an identification number which as used by the applicant is a security-related parameter. Moreover, in view of column 10 lines 61-65 and column 11 lines 53-65 it can clearly be seen that the rights key which is generated from the device key/identification number is used to decrypt/access the content; which meets the functionality of the identification number as defined by the Applicant. Moreover in column 12 lines 24-32, 37-40 and 62-66, Kocher explains the use of the device key to determine permission of access to the services, which also meets a requirement of the identification number as stated by the Applicant); and

the identification number is used to limit a cloning attack wherein said cloning attack comprises copying the identification number to a new CAM (column 14 lines 2-9 and column 18 lines 37-45 and column 26 lines 25-40; It can be clearly seen that the

function of the device key which is unique to a device implies a necessary concern that this key is not copied to another CAM. These passages clearly demonstrate that a compromised device key would require the cessation of enabling access to those CRUs containing that particular key. This is necessarily related to the cloning attack as discussed by the Applicant wherein if an identification number is known to be used by multiple devices illegally, those devices using that number would no longer be effective); and

a fixed state custom logic block, wherein the protected nonvolatile memory component is not directly accessible via a system bus and access to the protected nonvolatile memory component is limited to the custom logic block (Fig. 2 #260 wherein the CryptoFirewall is the custom logic block) and wherein data and address lines of the protected nonvolatile memory component are routed only to the fixed state custom logic block (Fig. 2 #260 and 265 wherein it is clear throughout the disclosure that only the CryptoFirewall has access to the protected memory, thus necessitating that the data and address lines of the protected memory are routed only to the fixed state custom logic block, as would be evident to one of ordinary skill).

Kocher does not disclose the CAM wherein programming control and a programming charge pump are shared by both the protected nonvolatile memory component and the un-protected nonvolatile memory component.

Wong does disclose wherein programming control and a programming charge pump is shared by memory (column 3 lines 7-19 and column 4 lines 1-7).

Wong is analogous art because it is directed to system concerning the use of non-volatile memory in a circuit.

It would have been obvious to modify Kocher to include wherein the various memory units, protected and unprotected, share programming control and a programming charge pump. Kocher discusses that the protected and unprotected memory are located on the same chip, thus enabling the use of a common programming control and charge pump.

Motivation for one to modify Kocher as discussed above would have been obvious to one of ordinary skill in the art. As discussed and implied in Wong, sharing a charge pump provides uniformity for a read or write voltage used when accessing the memory cells (column 3 lines 10-13). One of ordinary skill in the art should understand that the practice of sharing a charge pump is very common in the circuit design and practice and thus motivation for modifying Kocher would include the inherent advantages of sharing charge pumps as is known in the art.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brandon S. Bludau whose telephone number is 571-272-3722. The examiner can normally be reached on Monday -Friday 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on 571-272-3799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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